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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,337	03/26/2003	Joseph E. Earley Sr	P0280710	1958

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EXAMINER

PASTERCZYK, JAMES W

ART UNIT PAPER NUMBER

1755

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,337

Applicant(s)

EARLEY SR ET AL.

Examiner

J. Pasterczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29 is/are allowed.
- 6) ☒ Claim(s) 1-28 and 30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

1. The abstract of the disclosure is objected to because it lacks any specifics of the ligands, i.e. that they are polydentate, generally macrocyclic, and contain oxygen and/or nitrogen atoms bonding to the titanium atom. Correction is required. See MPEP § 608.01(b).

2. Figures 3 and 4 at least should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Other figures may very well also contain nothing but what is already known, e.g. figures 1, 2 and 9. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because figures 1-3 have horizontal lines running through the ORTEPs, both figures 1 and 2 appear to be of the same moiety though one has a positive charge and the other does not, and in figure 3 the coefficient on the oxygen atom of the perchlorate is not subscripted, and it is not clear what the two literature references are doing in the caption; is one the preparation of the compound and the other the crystal structure? Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be

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removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The disclosure is objected to because of the following informalities: in the chemical structures of pp. 13-14, there are numerous horizontal lines through the structures and accompanying text that should be removed.

Appropriate correction is required.

5. Claims 1-9, 11, 13-22, 24, 26-28 and 30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the catalyst and method of removing perchlorate ions requiring a multidentate ligand, does not reasonably provide enablement for the use of only titanium cations in moderately polar environments performing these functions. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. The claims as written are very broad, while the specification discloses that only titanium species containing the ligands of claims 10, 12, 23 and 25 are actually capable of functioning as the described catalysts. The presence of the ligands of the

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claims in the preceding paragraph thus appears to be critical to the functioning of the present invention.

6. Claims 1-28 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 2, 4, 9, 11, 14, 15, 17, 22, 24, 27, 28 and 30, various terms are used to refer to titanium-containing species, such as “titanium assemblies” and “titanium cations”. The latter term sounds as if the specie contains titanium alone without any other ligands or metals bonded to it, while the former is not a conventional chemical term, sounding more like a mechanical assembly of titanium metal parts. Hence --titanium-containing cations-- would be a more accurate term, while it is not clear what chemical term might correspond to “titanium assemblies”, although inserting --containing-- after “titanium” would certainly help.

Further in claims 1, 4, 14, 17, 27 and 28, the phrases “capable of transferring electrical charge to the perchlorate ion, thereby reducing the oxidation state of the chlorine center of the perchlorate ion”, and “having an effect on the interaction between the titanium cations and the perchlorate ion approximately the same as the effect of ethyl alcohol” are considered to be functional recitations having no corresponding chemical structural requirements that necessarily result in the claimed functions. See *Ex parte Slob*, 157 USPQ 172 (Bd. Pat. App. & Interf. 1968). Further in claims 4 and 17, it is not clear what the desired effect in fact is.

In claims 3, 16, 27 and 28, “moderately polar environment comprises ethyl alcohol” is a non sequitur since the former term is a property, while the latter is a proper noun.

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In claims 10, 12, 23 and 25, second line of each, insert a hyphen between "11" and "tetraaza-"; in the penultimate line correct the spelling of --porphyrin--, and --and-- should be between the last two members of the closed Markush group in each of these claims.

Claim 24 makes no sense since the recited method comprises a ligand in interaction with the titanium assembly. Such a relationship in a non sequitur; only a tangible object can further comprise another tangible object.

In claim 26 "the ligand" lacks antecedent basis; this claim should apparently depend from claim 22 instead of claim 14.

7. Claim 29 is allowable over the prior art currently of record. The other claims would be allowable over the prior art of record upon correction of the formal errors noted above.

8. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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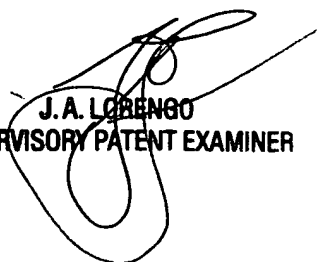
applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Pasterczyk

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8/25/06



J.A. LORENZO
SUPERVISORY PATENT EXAMINER